Ψ-FM-30×100 Tactical Field Coil

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Figure 1: Ψ-FM-30×100 Tactical Field Coil

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1 General Architecture

- The lower block remains almost identical to the capacitor: a robust cubic housing with four feet and exposed bolts. This block now contains:
  - The current driver for the **Ψ-Coil-M-30×100** (or 50×200, depending on the version).
  - Sensing and protection electronics (I-sense, temperature, ISA-Ψ SIG-OK / SIG-ERR lines).
- Above it—replacing the capacitor's "pressure chamber"—sits a **longer, proportionally scaled cylinder** corresponding to the internal 30×100 coil:
  - External dimensions approx. Ø 60–70 mm, visible height 140–180 mm.
  - Circular fins or concentric rings acting as **EM shielding + thermal management**, analogous to the ridged structure of the capacitor.

2 Interior

- Central core: the actual Ψ-Coil-M-30×100 (Ø 30 × 100 mm, air-core, Neff≈400), mounted on "Ψ-Mount-STANDARD" clamps inside the cylinder.
- Lower section of the cylinder: compartment for a stack of miniaturized Ψ-Cells powering the Ψ-pressure mode.
- Base: circular or rectangular PCB supporting:
  - Current-measurement shunts.
  - Full-bridge or half-bridge driver (or "external-driver mode" when used as a precision coil).

3 Connectors and Labels

On the lower block, three military-style circular connectors, aligned exactly as on the capacitor:

- Left: **B-FIELD MONITOR / OUTPUT**
  - BNC or LEMO providing a signal proportional to I(t) or Bz(t) (measured current + telemetry).
- Center: **POWER / ISA-Ψ**
  - Industrial 7P-Ψ connector: +12 V, GND, SIG-OK, SIG-ERR, CLK-Ψ, SYNC-0, SIG-ANA.
- Right: **CAL / ZERO-FIELD**
  - Accessible trimmer + "ZERO B" push button for sensor offset adjustment to achieve Bz≈0 at rest.

On the top cover of the cylinder:

- Shielded cable outlet (as in the capacitor) labeled **SYNC BUS / CLK-Ψ**, used to daisy-chain multiple Ψ-Coil-M units in arrays or field chambers.
- Laser-etched ring around the top: **Ψ-COIL-M-30×100 FIELD MODULE**.

4 Body Labels

- On the ribbed cylinder, lateral text: **COHERENT B-FIELD / EM SHIELDING** (matching the capacitor's "EM SHIELDING" typography).
- On the front face of the base:
  - Below the power connector: **POWER / ISA-Ψ**.
  - Below the monitor connector: **B-FIELD MONITOR**.
  - Below the calibration connector: **CAL / ZERO-FIELD**.

5 Suggested Field Volume

- Vertical axis emerging from the top, representing the "useful field region":
  - An invisible cylinder indicated by fine top-surface marking: circle of radius ≈ 8 mm with upward arrow labeled **UNIFORM FIELD REGION (r≈8 mm, L≈40 mm)**, consistent with the M-30×100 specification.

6 Public-Domain Declaration (CC0)

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References

[1] Omeñaca Prado, Carlos (2025). *PSI Coil: The Cylindrical Converter of Coherent Pressure — Complete Physical, Functional and Electrical Specification.* Internet Archive.

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